

0X8-4055
COPY 2-2



Westinghouse Electric Corporation

Air Arm Division

Friendship International Airport
Box 746, Baltimore 3, Md.
Telephone: 761-1000

October 15, 1962

Special Projects Office - ASZ-5
Plans & Programs Office
Directorate of Production
Wright-Patterson AFB, Ohio

SUBJECT: Contract AF33(600)40280
Change in scope - Item 16
Ground Support Equipment Special Items
Westinghouse Ref. AAC-45196-19

Enclosure (1): Three (3) copies of "Description of Changes to Ground Support Equipment Special Items", dated October 15, 1962

Enclosure (2): One (1) reproducible ad six (6) copies Exhibit B, Section I, Ground Support Equipment Special Items, Revised October 15, 1962.

Enclosure (3): Three (3) copies of Westinghouse Cost Analysis PE-777 Form dated October 18, 1962

Reference (A): Westinghouse Letter to Special Projects Office ASZ-5, dated 27 August 1962; Subject - Contract AF-33(600)40280 Program Extension, Westinghouse Reference AAC 45196.

Gentlemen:

In negotiating the Proposal of Reference "A", we mutually agreed to re-submit the quotation for changes to the Ground Support Equipment necessitated by equipment changes, as a revision to the Exhibit established for the GSE under Item 16. An outline of the changes required is presented in Enclosure (1).

Enclosure (2) is the revised Exhibit, showing revised part numbers (661R046601 changed to 661R046602 and 661R047601 changed to 661R047602) and incorporating the increased estimated cost and fee previously agreed to for the changes.

Enclosure (3) is a Cost Analysis Supporting our CFFF quotation for the changes of \$49,863 estimated cost plus \$3,500 fixed fee. This quotation differs slightly from our previous estimate due to Labor Adjustment and G&A rate changes made since our previous quotation.

25 YEAR RE-REVIEW

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We wish to note that this estimate has simply been pro-rated to each item on the revised Exhibit, Enclosure (2), based upon the original ratio of estimated cost between the two items.

The equipment changes also require 2 additional Standard GME items:

| <u>Qty.</u> | <u>Part Number</u> | <u>Description</u> |
|-------------|--------------------|--------------------|
| 1 | HP - 212A | Function Generator |
| 1 | Sanborn - 150 | 4 Channel Recorder |

By separate letter we will advise the Depot of this requirement.

Very truly yours,

WESTINGHOUSE ELECTRIC CORPORATION

[Redacted]
Project Liaison
Marketing Department

STAT

RMK:lb

Mmc.

cct: ASZ-5

Enclosure (1)
October 15, 1962

Description of Changes to

Ground Support Equipment
Model 1000

| <u>Item No.</u> | <u>Rev.</u> | <u>Part Number</u> | <u>Title</u> | <u>Brief Description of Changes</u> |
|-----------------|-------------|--|--|---|
| 1 | 1 | 6613046001 changed to 6613046002 | System Test Simulator Consisting of: | |
| | | | (a) Frequency Converter | Provisions to supply precision reference frequency. |
| | | | (b) Frequency Translator | Modification of Modulators and addition of Buffer Amplifiers. |
| | | | (c) Target Simulator | Modification of Servo loop "A" and addition of Electronic Circuitry to provide for generation of a 1 kc offset frequency, necessary for Stability Testing. Redesign of Servo loop "B" to provide precision calibration of stability analyzer for accurate testing of system WFO. Redesign of Ramp Generator Scope control circuitry to make possible testing variable Film Speed Recorder. Addition of a subsidiary control loop to Servo A to provide testing of MFT. and Angle compensation position loop. Addition of Buffer Stages to feed External Recorder. |
| | | | (d) Transponder | Modification of R.F. gating circuitry to facilitate CW operation, for testing MFT. |
| | | | (e) Stability Analyser | Modification of Video Amp to add variable gain control, redesign of Modulators to reduce amplitude modulation for extension of sensitivity. Addition of CW mode for test WFO. |
| | | | (f) Range Resolution Test Pattern Generation | Redesign of Variable Frequency Generator and narrow pulse generator to simulate new transmitter parameters. Redesign of Delay Driver Circuitry to provide variable gate widths. Modification of Dynamic Range Circuitry. |
| | | | (g) Power Supplies | |

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| <u>Item No.</u> | <u>Qty.</u> | <u>Part Number</u> | <u>Title</u> | <u>Brief Description of Change</u> |
|-----------------|-------------|--|----------------------------------|---|
| 1 (con't) | 1 | 661M046001 Changed to 661M046002 | (a) Control Panel | Redesign of Test Sequence Timer. Modification of control logic to facilitate additional test functions. Addition of precise pulse generating and counting circuitry to control accurate Film Speed Recorder. |
| 2 | 1 | 661M047001 Changed to 661M047002 | Evaluator Unit Consisting of: | <p>(a) Range Resolution Optics Assembly No Change</p> <p>(b) Azimuth Resolution Optics Assembly Modification of optics to facilitate spectrum analyzing sine wave patterns. Modification of optics to increase evaluator resolution.</p> <p>(c) Evaluation Electronics Circuitry Addition of logarithmic amplifier to provide linear Dynamic Range Readout.</p> <p>(d) Power Supplies No Change</p> |

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"EXHIBIT D"

Section I
Ground Support Equipment
Special Items

Contract AF 33(600)-40280

August 22, 1962

Revised October 15, 1962

| <u>Item No.</u> | <u>Qty.</u> | <u>Part Number</u> | <u>Description</u> | <u>Unit Estimated Cost</u> | <u>Unit Estimated Cost</u> |
|-----------------|-------------|--------------------|---|----------------------------|----------------------------|
| 1 | 1 | 661R046G02 | SYSTEM TEST SIMULATOR Consists of: | \$ 141,249 | \$ 141,249 |
| | | | (a) Frequency Converter | | |
| | | | (b) Frequency Translator | | |
| | | | (c) Target Simulator | | |
| | | | (d) Transponder | | |
| | | | (e) Pulsed RF Stability Analyzer | | |
| | | | (f) Range Resolution Test Pattern Generator | | |
| | | | (g) Power Supplies | | |
| | | | (h) Control Panel | | |
| 2 | 1 | 661R047G02 | EVALUATOR UNIT Consists of: | 33,697 | 33,697 |
| | | | (a) Range Resolution Optics Assembly | | |
| | | | (b) Azimuth Resolution Optics Assembly | | |
| | | | (c) Evaluation Electronics Circuitry | | |
| | | | (d) Power Supplies | | |
| | | | Sub Total Estimated Cost | 174,956 | |
| | | | Fixed Fee | <u>12,257</u> | |
| | | | CPFF Total | 187,213 | |

FE-777-1

NAME OF CONTRACTOR

Westinghouse Electric Corporation - Air Arms Division

ADDRESS (STREET)

P.O. Box 746

CITY

Baltimore

ZONE

3

STATE

Maryland

ORDER OR FILE NO.

AAN-45196-19

PRIME



SUB



PURCHASE REQUISITION NO.

CONTRACT NO.

AF 33(600)-40280

ITEM NO.

ARTICLE
SOARD Extension - Ground Support Equipment

QUANTITY

AT

AMOUNT

\$

EACH

NET TOTAL OF CONTRACT

\$

TERMS AND DISCOUNT

Changes

ANALYSIS OF PRICE AS OF

October 15, 1962

TYPE OF CONTRACT

CPFF

INDICATE WHETHER DATA BELOW IS:

PER UNIT

OR TOTAL



| LINE | ITEM | | AMOUNT |
|--|----------|-----------|-----------|
| 1. MANUFACTURING COST - DIRECT: | | X X X X X | X X X X X |
| A. DIRECT MATERIAL | | | X X X X X |
| B. FACTORY LABOR (HOURS) | | | X X X X X |
| C. FACTORY OVERHEAD | | | X X X X X |
| D. TOOLS, DIES, JIGS, PATTERNS & FIXTURES | | | X X X X X |
| E. OTHER (SCHEDULE ATTACHED) | | | X X X X X |
| F. TOTAL DIRECT MANUFACTURING COST | | X X X X X | X X X X X |
| 2. PRODUCT DEVELOPMENT (% OF 1F) | | X X X X X | |
| 3. ENGINEERING COST - DIRECT: | | X X X X X | X X X X X |
| A. DIRECT MATERIAL | \$ 4,360 | | X X X X X |
| B. ENGINEERING LABOR (5,120 HOURS) | 21,902 | | X X X X X |
| C. ENGINEERING OVERHEAD | 17,919 | | X X X X X |
| D. OTHER (SCHEDULE ATTACHED) | | | X X X X X |
| E. TOTAL DIRECT ENGINEERING COST | | X X X X X | \$ 44,181 |
| 4. GENERAL RESEARCH (4.5 % OF 1F + 2 + 3E) | | | 1,938 |
| 5. TOTAL MANUFACTURING & ENGINEERING COST (1F + 2 + 3E + 4) | | | 46,119 |
| 6. GENERAL AND ADMINISTRATIVE EXPENSE (8.0 % OF 5) | | | 3,694 |
| 7. CONTINGENCIES (FURNISH DETAILS) | | | |
| 8. OTHER EXPENSES (FURNISH DETAILS) | | | |
| 9. | | | |
| 10. | | | |
| 11. TOTAL COST (SUM OF LINES 5 THRU 10) | | | 49,863 |
| 12. | | | |
| 13. OPERATING PROFIT OR FIXED FEE | | | 3,500 |
| 14. | | | |
| 15. | | | |
| 16. TOTAL ESTIMATED COST INCLUDING FIXED FEE - COST TYPE CONTRACTS | | | \$ 53,363 |
| 17. SELLING PRICE - FIXED PRICE CONTRACTS | | | |
| 18. | | | |
| 19. | | | |
| 20. | | | |

SEE DESCRIPTION OF COST AND PRICE ANALYSIS PROCEDURE

The subcontracted portion of this contract is estimated at _____ % of selling price.

CERTIFICATION

This is to certify that the above information contained in this report has been compiled from the records and books of this company (or is an estimate based on such books and records) and to the best of our knowledge and belief the costs and expenses shown hereon are correctly stated.

STAT

Westinghouse Electric Corp. - Air Arms Div.
CONTRACTOR

October 18, 1962

DATE

Enclosure (3)

October 15, 1962

Small Aircraft EquipmentANW - 45186-19Labor Breakdown

| <u>Product Center</u> | <u>Hours</u> | <u>Rate</u> | <u>Total Labor Cost</u> |
|-------------------------|--------------|-------------|-------------------------|
| Tech. Pub. | 250 | 6.81 | \$ 1,553 |
| Model Shop | 200 | 6.66 | 1,332 |
| Components | 50 | 8.73 | 437 |
| Drafting | 500 | 5.87 | 2,935 |
| Engr. Lab. | 500 | 5.25 | 2,625 |
| Support & Evaluat. 1962 | | 7.99 | 15,341 |
| Radar Div. | 1000 | 8.81 | 8,882 |
| Mech. Design | 350 | 8.81 | <u>3,084</u> |
| | | | <u>36,188</u> |
| | | | <u>724</u> |
| | | | <u>\$ 36,922</u> |

Labor M.J. 00%

1963

| | | | |
|------------|-----|------|------------------|
| Radar Div. | 350 | 7.99 | \$ 2,797 |
| | | | <u>112</u> |
| | | | <u>2,909</u> |
| | | | <u>\$ 39,821</u> |

Labor M.J. 00%

TOTAL 1962 and 1963

"EXHIBIT B"

Section I
Ground Support Equipment
Special Items

Contract AF 33(600)40280

August 22, 1962
Revised October 15, 1963
Revised March 11, 1963

| <u>Item No.</u> | <u>Qty.</u> | <u>Part Number</u> | <u>Description</u> | <u>Unit Estimated Cost</u> | <u>Unit Estimated Cost</u> |
|-----------------|-------------|--------------------|--|----------------------------|----------------------------|
| 1 | 1 | 661R046G03 | SYSTEM TEST SIMULATOR Consists of: | \$ 157,566 | \$ 157,566 |
| | | | (a) Frequency Converter (b) Frequency Translator (c) Target Simulator (d) Transponder (e) Pulse RF Stability Analyzer (f) Range Resolution Test Pattern Generator (g) Power Supplies (h) Control Panel (i) Single Axis Platform Test Set | | |
| 2 | 1 | 661R047G02 | EVALUATOR UNIT Consists of: | 33,697 | 33,697 |
| | | | (a) Range Resolution Optics Assembly (b) Azimuth Resolution Optics Assembly (c) Evaluation Electronics Circuitry (d) Power Supplies | | |
| | | | Sub Total Estimated Cost | \$ 191,263 | |
| | | | Fixed Fee | <u>13,407</u> | |
| | | | CPFF Total | \$ 204,670 | |